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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,267	04/02/2004	Michael A. Fetcenko	OBC-123.1	1788
24963 7590 06/15/2007 ENERGY CONVERSION DEVICES, INC. 2956 WATERVIEW DRIVE ROCHESTER HILLS, MI 48309			EXAMINER MAI, NGOCLAN THI	
			ART UNIT 1742	PAPER NUMBER
			MAIL DATE 06/15/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/817,267	<b>Applicant(s)</b> FETCENKO ET AL.	
	<b>Examiner</b> Ngoclan T. Mai	<b>Art Unit</b> 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 and 37-49 is/are rejected.
- 7) ☒ Claim(s) 34-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see pages 10-14, filed March 29, 2007, with respect to the rejections of claims 1-7, 12-23, 28, 29 and 30 under 35 U.S.C. 102(b) as being anticipated by Willems et al. (U.S. Patent No. 4,487,817) and claims 8-1, 24-27, 31-32 under 35 U.S.C. 103(a) as being unpatentable over Willems have been fully considered and are persuasive. Therefore, these rejections have been withdrawn.
2. The rejections of claims 33, 37-46, 48-49 on the ground of non-statutory obviousness-type double patenting over claim 1, 3, 7, 9, 11, 13, 15, 17, 21, 22 and 23 of U.S. Patent No. 6,830,725 (patent '725) and of claims 1-2, 11, 12-23 and 28-31 as being anticipated by Komori et al. (U.S. Patent No. 5,512,385) are maintained.
3. In response to the rejections maintained as above applicants have argued that the property of the hydrogen absorbing having a maximum concentration difference of less than 0.25 weight % absorbed hydrogen is not inherently in the alloy taught by patent '725 or the alloy described by Komori. This is because material B12 (described by the applicants), which is the same alloy disclosed by the patent '725, (see TABLE 1) and has a composition fall within the composition of the hydrogen absorbing alloy of Komori has a MCD of greater than 0.33. This is not convincing because material B1 disclosed by the applicants (see para 0127), which composition is also disclosed by patent '725, TABLE 1 and has similar composition to the hydrogen absorbing alloy of Komori has a MCD of 0.2, para 0127. For this reason applicant has not shown that the hydrogen absorbing storage of patent '725 or Komori is not inherently possessed the MCD as required by the claims.
4. Upon further consideration, the claims are further rejections for reasons as follow.
5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2, 13-23, and 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Takamaru et al. (US 2004/0159377).

In regards to claims 1 and 28 Takamaru teaches a hydrogen storage alloys having a composition represented by the formula  $RNi_xCo_yM_z$  where R is rare earth elements including yttrium, M stands for Mg, Al, Mn, Fe, Cu, Zr, Ti, Mo, W, B or mixture thereof, x satisfies  $3.7 \leq x \leq 5.3$ , y satisfies  $0.1 \leq y \leq 0.5$ , z satisfies  $0.1 \leq z \leq 1.0$  and  $5.1 \leq x+y+z \leq 5.5$ , para 0011. The examiner notes that Takamaru's hydrogen storage alloys are non-stoichiometric compositions  $AB_{5+x}$  where x is a measure of non-stoichiometric compositional deviation of  $AB_5$ -type alloy disclosed by the applicant on page 27, line 17 to page 28, line 2. This  $AB_5$ -type compounds are characterized by a  $CaCu_5$  crystal structure, disclosed by the applicant on page 28, lines 3-9. The hydrogen storage alloys of Takamaru therefore have the claimed crystal structure.

The examiner notes that Takamaru teaches hydrogen storage alloys comprising Co having atomic ratio as low as 0.1 and as high as 0.5 but does not teach the concentration of Co in atomic percent as recited in claims 1 and 13-15. However it is the examiner's position that, when converted to atomic percent, this amount inherently encompasses the claimed amount absent evidence to the contrary.

In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

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As for the half-cell capacity recited in claims 1, 19 and 20; the maximum concentration difference recited in the claims 1, 16, 17 and 18; and magnetic susceptibility as recited in claims 21-23, 28-30, such limitations would have been inherently possessed by the alloys of the reference because the instant claimed hydrogen storage alloy having crystal structure and composition are substantially the same of the cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possesses characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990), In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977) and also see MPEP § 2112.01.

As for claim 2, Takamaru teaches the alloy comprises mischmetal that include lanthanide element, para 0046.

8. Claims 1-2, 11, 12-23, and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Komori et al. (U.S. Patent No. 5,512,385). The rejection was made in previous office action and is incorporated herein by reference.

#### ***Claim Rejections - 35 USC § 103***

9. Claims 3-12, 24-27, 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takamaru.

Takamaru discloses hydrogen storage alloy substantially as claimed. While Takamaru does not specifically teach a cycle life enhancement element recited in claims 3-4 and other element recited in claims 11 and 12, Takamaru however disclose M can be **Mg**, **Al**, **Mn**, Fe, **Cu**, **Zr**, **Ti**, Mo, W, B or mixture thereof. It would have been obvious to one of ordinary skill in the art to select the claimed elements, from the broader range of elements disclosed in the reference because the prior art teaches the same utility over the entire range. --- Note: Even if a

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reference teaches a preferred range within a broader range, it still does not “teach away” from the claimed invention. See MPEP 2123.

Regarding claims 8-10, 24, 31 and 32 while Takamaru does not specifically teach the alloy further comprises the combination of cycle life enhance element and Cu, Takamaru teaches that M can be a mixture of elements selected from **Mg, Al, Mn**, Fe, **Cu, Zr, Ti**, Mo, W, B. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any combination of elements in M to derive at the claimed alloy because the prior art teaches the same utility in any combination. As for the claimed concentration of Cu, Takamaru teaches it can have atomic ratio as low as 0.1 and as high as 1.0. It is also the examiner's position that, when converted to atomic percent, this amount inherently encompasses and/or overlaps the claimed amount absent evidence to the contrary, thereby establishing a prima facie case of obviousness. See MPEP 2144.05 L. Therefore it would have been obvious to one of ordinary skill in the art to select any portion of range, including the claimed range, from the broader range disclosed by the cited reference because the prior art reference teaches the same utility over the entire disclosed range. As for the half-cell capacity recited in claims 24, and 26-27, such limitations would have been inherently possessed by the alloys of the reference because the instant claimed hydrogen storage alloy having crystal structure and composition are substantially the same of the cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possesses characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990), In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977) and also see MPEP § 2112.01.

In regard to claims 5-7 and 25, Takamaru teaches hydrogen storage alloys comprising Zr, Mg, Ti having atomic ratio as low as 0.1 and as high as 1.0 but does not teach the concentration in atomic percent. However it is the examiner's position that, when converted to atomic percent, this amount inherently encompasses and/or overlaps the claimed amount absent evidence to the

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contrary, thereby establishing a prima facie case of obviousness. See MPEP 2144.05 L. It would have been obvious to one of ordinary skill in the art to select any portion of range, including the claimed range, from the broader range disclosed by the cited reference because the prior art reference teaches the same utility over the entire disclosed range.

10. Claims 33, 37-49 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 7, 9, 11, 13, 15, 17, 21-23, 31 of U.S. Patent No. 6,830,725. The rejection was made in previous office action and is incorporated herein by reference. Note that claim 47 is disclosed in claim 31 of the patent.

#### **Allowable Subject Matter**

11. Claims 34-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

n.m.

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